

Serial/Patent No.: 10/039,586  
Filing Date: 1/4/02  
Atty Docket: SPLX.P0048

Atty/Secty: MA/es  
Date Mailed: 11/13/2003

Serial/Patent No.: 10/039,586  
Filing Date: 1/4/02  
Atty Docket: SPLX.P0048  
Applicant(s): Steve Teig

Atty/Secty: MA/es  
Date Mailed: 11/13/2003

TITLE: Method and Apparatus for Storing Routes for Groups of Related Net Configurations

*The following has been received by the U.S. Patent & Trademark Office on the date stamped hereon:*

1. Transmittal Form
2. Information Disclosure Statement (2 pages)
3. Form PTO-1449 (7 pages)
4. (88) cited references



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<b>TRANSMITTAL FORM</b>  <i>(to be used for all correspondence after initial filing)</i>	Application Number	10/039,586
	Filing Date	1/4/02
	First Named Inventor	Steve Teig
	Group Art Unit	2661
	Examiner Name	
Total Number of Pages in This Submission	Attorney Docket Number	SPLX.P0048

Enclosures (Check all that apply)		
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Firm Or Individual name	Mani Adeli, Reg. No. 39,585 of Stattler Johansen & Adeli LLP
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PATENT  
Docket No. SPLX.P0048

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Mani Adeli

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In the application of:

Steve Teig

Serial No.: 10/039,586

Filing Date: 1/4/02

For: METHOD AND APPARATUS FOR  
STORING ROUTES FOR GROUPS OF  
RELATED NET CONFIGURATIONS

**INFORMATION DISCLOSURE  
STATEMENT UNDER 37 C.F.R. § 1.97**

Commissioner for Patents  
P.O. Box 1450  
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Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, applicants submit with this Information Disclosure Statement the attached Form PTO-1449, and copies of the documents listed in the 1449 form for consideration by the Examiner. The Examiner is requested to make these documents of record. Applicants would appreciate the Examiner initialing and returning the Form PTO-1449, indicating that the information has been considered and made of record herein.

This Information Disclosure Statement under 37 C.F.R. § 1.97 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

This Information Disclosure Statement is submitted within three months of the application filing date or before the mailing date of a first Office Action on the merits; accordingly, no fee or separate requirements are required.

However, in the unlikely event that the Patent Office determines that additional fees, extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 50-1128 referencing SPLX.P0048. However, the Assistant Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: November 13, 2003

Respectfully submitted,

By: 

**Mani Adeli**

Registration No. 39,585

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Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				Application Number	10/039,586
				Filing Date	1/4/02
				First Named Inventor	Steve Teig
				Group Art Unit	2661
				Examiner Name	
Sheet	1	of	7	Attorney Docket Number	SPLX.P0048

U.S. PATENT DOCUMENTS						
Examiner* Initials	Cite No.	U.S. Patent Document		Date of Publication MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (If known)			
	1.	2001/0009 031	A1	07-19-2001	Nitta et al.	
	2.	2002/0182 844	A1	12-05-2002	Igarashi et al.	
	3.	2003/0005 399	A1	01-02-2003	Igarashi et al.	
	4.	4,593,363		06-03-1986	Burstein et al.	
	5.	5,267,176		11-30-1993	Antreich et al.	
	6.	5,566,078		10-15-1996	Ding et al.	
	7.	5,587,923		12-24-1996	Wang	
	8.	5,618,744		04-08-1997	Suzuki et al.	
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	10.	5,637,920		06-10-1997	Loo	
	11.	5,640,327		06-17-1997	Ting	
	12.	5,663,891		09-02-1997	Bamji et al.	
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	19.	6,070,108		05-30-2000	Andreev et al.	
	20.	6,128,767		10-03-2000	Chapman	

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\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number(optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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			Group Art Unit	2661	
			Examiner Name		
Sheet	2	of	7	Attorney Docket Number	SPLX.P0048

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	21.	6,150,193		11-21-2000	Glenn	
	22.	6,209,123	B1	03-27-2001	Maziasz et al.	
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	24.	6,226,560	B1	05-01-2001	Hama et al.	
	25.	6,249,902	B1	06-19-2001	Igusa et al.	
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	27.	6,295,634	B1	09-25-2001	Matsumoto	
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	39.	6,480,991	B1	11-12-2002	Cho et al.	
	40.	6,490,713	B2	12-03-2002	Matsumoto	
	41.	6,519,751	B2	02-11-2003	Sriram et al.	
	42.	6,543,043	B1	04-01-2003	Wang et al.	
	43.	6,546,540	B1	04-08-2003	Igarashi et al.	

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				Group Art Unit	2661
				Examiner Name	
Sheet	3	of	7	Attorney Docket Number	SPLX.P0048

U.S. PATENT DOCUMENTS					
44.	6,557,145	B2	04-29-2003	Boyle et al.	
45.	6,567,967	B2	05-20-2003	Greidinger et al.	

FOREIGN PATENT DOCUMENTS								
Examiner* Initials	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code (If known)				
	46.	JP	411296560	A	Matsumoto et al.	10-29-1999	with English translation of Abstract;	
	47.	JP	2000-82743	A	Igarashi et al.	03-21-2000	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	✓
	48.	JP	H03-173471	A	Tawada et al.	07-26-1991	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	✓
	49.	JP	H05-243379	A	Masako Kubota	09-21-1993	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	✓
	50.	JP	H05-102305	A	Akihiro Sato	04-23-1993	with Japanese Patent Office's English translation of Abstract; and with English translation of the	✓

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				First Named Inventor	Steve Teig
				Group Art Unit	2661
				Examiner Name	
Sheet	4	of	7	Attorney Docket Number	SPLX.P0048

FOREIGN PATENT DOCUMENTS							
						application.	
51.	JP	H07-86407	A	Shinpei Miura	03-31-1995	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	√
52.	JP	H09-162279	A	Masaaki Yoshida	06-20-1997	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	√

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			Group Art Unit	2661	
			Examiner Name		
Sheet	5	of	7	Attorney Docket Number	SPLX.P0048

## FOREIGN PATENT DOCUMENTS

## NON PATENT LITERATURE DOCUMENTS

Examiner's Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
	53.	Ahuja, R. et al., Faster Algorithms for the Shortest Path Problem, Journal of the Association for Computing Machinery, vol. 37, No. 2, April 1990, pp. 213-223.	
	54.	Brady, L. et al., Channel Routing on a 60° Grid, extended abstract, pp. 956-931.	
	55.	Brambilla, A. et al., Statistical Method for the Analysis of Interconnects Delay in Submicrometer Layouts, IEEE, 8/2001, pp. 957-966.	
	56.	Carothers, K., A Method of Measuring Nets Routability for MCM's General Area Routing Problems, 1999, pp. 186-192.	
	57.	Chen, H. et al., Physical Planning of On-Chip Interconnect Architectures, 2002, IEEE, International Conference, pp. 30-35.	
	58.	Cheng, K., Steiner Problem in Octilinear Routing Model, a Thesis Submitted for the Degree of Master of Science, National University Singapore, 1995, pp. 1-122.	
	59.	Chip Model with Wiring Cost Map, August 1983, IBM Technical Disclosure Bulletin, vol. 26, iss. 3A, pp. 929-933.	
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	61.	Cong, J. et al., Performance-Driven Multi-Layer General Routing for PCB/MCM Designs, UCLA Computer Science Department, 1998, pp. 356-361.	
	62.	Enbody, R. et al., Near-Optimal <i>n</i> -Layer Channel Routing, 23 <sup>rd</sup> Design Automation Conference, 1986, pp. 708-714.	
	63.	Fang, S. et al., Constrained Via Minimization with Practical Considerations for Multi-Layer VLSI/PCB Routing Problems, 28 <sup>th</sup> ACM/IEEE Design Automation Conference, 1991, pp. 60-65.	
	64.	Hom, I. et al., Estimation of the Number of Routing Layers and Total Wirelength in a PCB Through Wiring Distribution Analysis, 1996, pp. 1-6.	
	65.	Hong, X. et al., Performance-Driven Steiner Tree Algorithms for Global Routing, 30 <sup>th</sup> ACM/IEEE Design Automation Conference, 1993, pp. 177-181.	

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			Group Art Unit	2661	
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Sheet	6	of	7	Attorney Docket Number	SPLX.P0048

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				Filing Date	1/4/02
				First Named Inventor	Steve Teig
				Group Art Unit	2661
				Examiner Name	
Sheet	7	of	7	Attorney Docket Number	SPLX.P0048

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